

AWARD/CONTRACT		1. This Contract Is A Rated Order Under DPAS (15 CFR 700)		Rating DOA4		Page 1 Of 24	
2. Contract (Proc. Inst. Ident) No. DAAE07-03-C-L135		3. Effective Date 2003DEC24		4. Requisition/Purchase Request/Project No. SEE SCHEDULE			
5. Issued By TACOM WARREN BLDG 231 AMSTA-AQ-ABGA MARY WEST (586)574-7627 WARREN, MICHIGAN 48397-5000 HTTP://CONTRACTING.TACOM.ARMY.MIL e-mail address: WESTM@TACOM.ARMY.MIL		Code W56HZV		6. Administered By (If Other Than Item 5) DCMA DETROIT U.S. ARMY TANK & AUTOMOTIVE COMMAND (TACOM) ATTN: DCMAE-GJD WARREN, MI 48397-5000		Code S2305A	
				SCD C PAS NONE		ADP PT HQ0337	
7. Name And Address Of Contractor (No. Street, City, County, State, And Zip Code) NEWAZ TECHNOLOGIES 3725 TREMONT LN ANN ARBOR, MI. 48105 TYPE BUSINESS: Small Disadvantaged Business Performing in U.S.				8. Delivery <input type="checkbox"/> FOB Origin <input checked="" type="checkbox"/> Other (See Below) SEE SCHEDULE			
				9. Discount For Prompt Payment			
				10. Submit Invoices (4 Copies Unless Otherwise Specified)		Item 12	
Code 1WB39				Facility Code		To The Address Shown In:	
11. Ship To/Mark For SEE SCHEDULE		Code		12. Payment Will Be Made By DFAS - COLUMBUS CENTER DFAS-CO/NORTH ENTITLEMENT OPERATION P.O. BOX 182266 COLUMBUS OH 43218-2266		Code HQ0337	
13. Authority For Using Other Than Full And Open Competition: <input type="checkbox"/> 10 U.S.C. 2304(c)() <input type="checkbox"/> 41 U.S.C. 253(c)()				14. Accounting And Appropriation Data ACRN: AA 21 42040000046N6N7EP665502255Y S20113 W56HZV			
15A. Item No. SEE SCHEDULE		15B. Schedule Of Supplies/Services CONTRACT TYPE: Cost-Plus-Fixed-Fee		15C. Quantity		15D. Unit	
				15E. Unit Price		15F. Amount	
				KIND OF CONTRACT: Research and Development Contracts			
15G. Total Amount Of Contract						\$729,429.00	
16. Table Of Contents							
(X)	Section	Description	Page(s)	(X)	Section	Description	Page(s)
Part I - The Schedule				Part II - Contract Clauses			
X	A	Solicitation/Contract Form	1	X	I	Contract Clauses	17
X	B	Supplies or Services and Prices/Costs	2	Part III - List Of Documents, Exhibits, And Other Attachments			
X	C	Description/Specs./Work Statement	4	X	J	List of Attachments	24
X	D	Packaging and Marking	9	Part IV - Representations And Instructions			
X	E	Inspection and Acceptance	10		K	Representations, Certifications, and Other Statements of Offerors	
X	F	Deliveries or Performance	11				
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X	H	Special Contract Requirements	14		M	Evaluation Factors for Award	
Contracting Officer Will Complete Item 17 Or 18 As Applicable							
17. <input checked="" type="checkbox"/> Contractor's Negotiated Agreement (Contractor is required to sign this document and return 2 signed copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)				18. <input type="checkbox"/> Award (Contractor is not required to sign this document.) Your offer on Solicitation Number _____ including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.			
19A. Name And Title Of Signer (Type Or Print)				20A. Name Of Contracting Officer DEREK MCALEER MCALEERD@TACOM.ARMY.MIL (586)574-7197			
19B. Name of Contractor		19c. Date Signed		20B. United States Of America		20C. Date Signed	
By _____ (Signature of person authorized to sign)				By _____ /SIGNED/ (Signature of Contracting Officer)		2003DEC24	
NSN 7540-01-152-8069 PREVIOUS EDITIONS UNUSABLE				25-106 GPO : 1985 0 - 478-632		Standard Form 26 (Rev. 4-85) Prescribed By GSA-FAR (4.8 CFR) 53.214(a)	

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN DAAE07-03-C-L135 MOD/AMD	Page 2 of 24
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Name of Offeror or Contractor: NEWAZ TECHNOLOGIES

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT										
0001	<p>SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS</p> <p><u>SERVICES LINE ITEM</u></p> <p>SECURITY CLASS: Unclassified</p> <p>Contractor shall furnish all the supplies and services to accomplish the tasks specified in Section C "Scope of Work" for SBIR Phase II.</p> <p>ESTIMATED COST OF CONTRACT: \$698,018.00 FIXED FEE : \$ 31,411.00 TOTAL ESTIMATED COST OF CONTRACT: \$729,429.00</p> <p>(End of narrative B001)</p>														
0001AA	<p><u>SERVICES LINE ITEM</u></p> <p>NOUN: FY04 PHII NEWAZ TECHNOLOGIES PRON: E142C005EH PRON AMD: 01 ACRN: AA AMS CD: 665502M4055</p> <p><u>Inspection and Acceptance</u> INSPECTION: Destination ACCEPTANCE: Destination</p> <p><u>Deliveries or Performance</u></p> <table><tr><td>DLVR SCH</td><td>PERF COMPL</td></tr><tr><td><u>REL CD</u></td><td><u>QUANTITY</u></td></tr><tr><td>001</td><td>0</td></tr><tr><td></td><td><u>DATE</u></td></tr><tr><td></td><td>28-FEB-2006</td></tr></table> <p>\$ 380,268.00</p>	DLVR SCH	PERF COMPL	<u>REL CD</u>	<u>QUANTITY</u>	001	0		<u>DATE</u>		28-FEB-2006				\$ 380,268.00
DLVR SCH	PERF COMPL														
<u>REL CD</u>	<u>QUANTITY</u>														
001	0														
	<u>DATE</u>														
	28-FEB-2006														
0002	<p><u>DATA ITEM</u></p> <p>SECURITY CLASS: Unclassified</p> <p>Technical data as set forth in Contract Data Requirements List (DD Form 1423) hereinafter referred to as Exhibit A</p> <p>(End of narrative B001)</p> <p><u>Inspection and Acceptance</u> INSPECTION: Destination ACCEPTANCE: Destination</p>			\$ ** NSP **	\$ ** NSP **										

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B.1 ESTIMATED COST AND PAYMENT

B.1.1 The estimated cost for performance of the work required under this contract is \$729,429.00 and shall constitute the estimated cost for the purpose of the Contract Clause in Section I entitled "Limitation of Funds" (FAR 52.232-22).

B.1.2 Allowable cost shall be determined, and payment thereof shall be provided, in accordance with the Contract Clause in Section I entitled "Allowable Cost and Payment" (FAR 52.216-7).

B.2 PAYMENT

The contractor may submit public vouchers every two weeks for payment under this contract.

B.3 FUNDING

B.3.1 The Government shall provide funds under this contract covering the estimated cost hereof on an incremental basis as provided for in the following funding schedule and pursuant to the Contract Clause in Section I entitled "Limitation of Funds" (FAR) 52.232-22). It is estimated that the incremental amounts are sufficient for the performance of work in each of the cited periods. The Government may, at its discretion, allot such funds on an incremental basis within each fiscal year. The contractor shall so plan and execute the work required by this contract as to expend and/or commit funds compatible with the schedule set forth below. Whenever the contractor has reason to believe that the funds allotted to this contract for any fiscal year are either insufficient or excessive for the performance of work required in that fiscal year, the Government shall be so notified.

B.3.2 FUNDING SCHEDULE

<u>Performance Period</u>	<u>Amount</u>
Date of Award through 28 Feb 05	\$ 380,268.00
01 Mar 05 through 28 Feb 06	\$ 349,161.00

B.4 FUNDS ALLOTTED

The amount of funds currently obligated against this contract is \$ 380,268.00.

*** END OF NARRATIVE B 001 ***

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SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

	<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
C-1	52.204-4003 (TACOM)	START OF WORK MEETING	MAY/2000

The contractor shall host a start of work meeting at its facility, unless some other location is designated in the contract, within 60 days after contract award or as mutually agreeable with the Contracting Officer's Representative (COR). The contractor shall at a minimum invite the Contracting Officer's Representative (COR) identified in Section G or in an appointment letter, the Contract Specialist identified on the face page of this document, and the Administrative Contracting Officer (ACO). The COR, Contract Specialist, and ACO shall be given at least 14 days advance notice of the time, date, and location of the start of work meeting. The preferred method of notification is by email.

[End of Clause]

SECTION C: STATEMENT OF WORK (SOW)

Inducing Retained Compressive Stresses for the Design of Lightweight Tough Composite Materials Structure

1. Background Information and Objectives:

The U. S. Army has significant interest in lightweight structures to be used for its ground vehicles. An important application of the lightweight structures will be the Future Combat Systems (FCS) land vehicles. Silicon carbide particulate reinforced aluminum metal matrix composites offer much potential for reducing the weight compared to steel in track shoe applications. The proposed metal matrix composites (MMC) shall provide an alternative method for making track shoe components with improved performance goals. Also, a net-shape manufacturing method is required to reduce the machining costs of complex shapes.

The present metal matrix composites are insufficient to produce high durability required by the Army ground vehicle applications. This program will use Shape Memory Alloy (SMA) to induce the compressive residual stresses in the composite, thus reducing the crack growth rate in the composite and leading to improved durability (fatigue life), damage tolerance and fracture toughness.

The Objectives of this SBIR II program are:

(1) Optimize the microstructure (distributions of SMA reinforcement and SiC particulates) of the metal matrix composites, based on the progresses in processing technology in SBIR Phase I program. A determination of the best combination of shape memory alloy reinforcement, silicon carbide particulate distribution in a suitable aluminum alloy metal matrix shall be performed to achieve superior properties of the metal matrix composites and for the different processing routes proposed in this investigation.

(2) Develop SMA based hybrid composites reinforced with silicon carbide particulates in aluminum matrix (SMA/SiC/Al MMC) to induce compressive residual stresses.

(3) Study the improvements in the mechanical properties achieved in Phase II against Phase I results. Assess durability, damage tolerance and fracture toughness in Phase II through mechanical properties tests.

(4) Gain a fundamental knowledge of the behavior of SMA based metal matrix composites through analytical modeling.

(5) Modify Phase I manufacturing process to demonstrate an efficient manufacturing technology for making complex ground vehicle track shoe shapes

(6) Investigate new manufacturing methods to make SMA metal matrix composites that includes a combination of powder metallurgy, deformation processing and metal casting. The quality of the new composites will be evaluated in terms of compaction, material uniformity, defect or void population etc.

In order to accomplish the objectives of this SBIR Phase II program, the contractor shall conduct the following key tasks which are complementary and comprehensive in materials development efforts:

- A. Constitutive Modeling for Material Design
- B. Material Processing and Manufacturing Methods
- C. Mechanical Properties Testing for SMA Composite
- D. Development of Representative Components from SMA Composites

2. SBIR Phase II Tasks:

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Task A. Constitutive Modeling for Material Design

Task A.1 Model for residual stresses:

The contractor shall develop analytical models sufficient for micro structural design, and to predict the mechanical properties, including computing the residual stresses in hybrid composite. These models are based on micromechanics equations and take into account constituent properties to predict the overall response of SMA composites. These models shall be idealistic and are essentially virtual models, and all micromechanics calculations can be done without actually making the composites. These models shall be used as a guideline to understand the behavior of SMA composites and to design and manufacture them efficiently. Hybrid composites shall consist of titanium-nickel (Ti-Ni) intermetallic shape memory alloy materials in the form of particulates or short fibers embedded in the silicon carbide particulate reinforced aluminum metal matrix composites.

Analytical models shall include equations to compute the micro structural design to determine the distribution and volume percent of shape memory alloys and silicon carbide particulates in aluminum metal matrix for required shape memory effect to induce residual stresses. Also, the analytical models for mechanical properties shall include equations to determine the mechanical properties such as residual stresses, prestrain in titanium-nickel intermetallic shape memory alloy (Ti-Ni), stress-strain curves.

Tasks A.2 The model for computing the pre-strain in the titanium-nickel (Ti-Ni) intermetallic shape memory alloy material is defined below:

The contractor shall develop sufficient analytical models to compute the pre-strain in the titanium-nickel (Ti-Ni) intermetallic shape memory alloy material in the hybrid composite. The pre-strain shall be required to assess the induced compressive strain in the aluminum matrix.

Task A.3 Model for stress-strain curves for the hybrid composites:

The contractor shall develop sufficient analytical models to predict the stress-strain curves for the hybrid composites.

The analytical models shall have the capability to draw stress-strain curves at room temperature for samples that may have gone through prior thermal history (temperature cycling from casting and powder metallurgy process). These models shall be developed for MMC processed from a casting process and a powder metallurgy process.

Task B. Material Processing and Manufacturing Methods:

For Tasks B.1-B.3, the contractor shall conduct manufacturing processing studies to determine the most efficient route for material production with the least amount of defects using the following three (3) production processes in order to obtain the optimum mechanical properties. From these manufacturing processing studies, the contractor shall develop test samples for the fabrication of flat, lab-scale, hybrid composites. These test samples shall be a sufficient number to conduct the testing required in Task C.

Powder Metallurgy Process
Powder Hydroforming/Deformation Process
Squeeze Casting Process

Task B.1 Powder Metallurgy Process

The contractor shall develop the powder metallurgy process for manufacturing composite preform, including (1) hydrostatic pressing followed by sintering, and (2) hot pressing, for making hybrid composites. The contractor shall conduct a detailed study of the process parameters such as sintering kinetics as a function of thermal schedule, hot pressing kinetics as a function of temperature and pressure. From this study, the contractor shall determine the best powder metallurgy process parameters to obtain metal matrix composites with optimized mechanical properties.

Task B.2 Powder Hydroforming/Deformation Process

The contractor shall develop the process of making flat lab-scale test samples using the hydroforming/deformation method. If this approach is not effective, the contractor shall utilize a pure casting process from the Phase I contract. The contractor shall conduct a detailed study of the process parameters such as the green body density as a function of hydraulic pressure, and its effect to the final density after infiltration casting, the condition of infiltration temperature and time, and the effect of processing conditions on the final properties.

The contractor shall use the deformation processing method (metal forming), from the Phase I contract, to obtain the hybrid composite in order to improve the mechanical properties of the composite. The objective of this effort is to understand the process parameters such as temperature, pre-strain of the shape memory alloy, volume fraction of the SMA, and SiC particulates.

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Task B.3 Squeeze Casting Process

The contractor shall also develop the SMA composite using another manufacturing route known as squeeze casting. The process parameters shall be identified to prepare the composites. The composites shall contain SMA fibers, SiC particulates in Aluminum matrix.

Task B.4 Comparison of the Three (3) Manufacturing Processes and Selection of the Best Process

As part of the quarterly status reports and the final report listed in E.1 and E.2, the contractor shall provide the results of the studies conducted on the three manufacturing processes (Task B.1-B.3) and determine the process most suitable for the specific types of components. In the technical reports (database format), the contractor shall detail the results and the advantages and disadvantages of each of the three manufacturing processes and determine the best process for making the flat lab-scale composites to be tested in Task C.

Task C: Mechanical Properties Testing of SMA Composite

Based on the results of the analysis in Task B.4, the contractor shall select the best process (B.1 or B.2 or B.3) and conduct the following mechanical property testing on the test samples from the selected process. Except for Task C.1, the tests in Task C shall be conducted at room temperature.

Task C.1 Static Mechanical Tests:

The contractor shall perform static tension and compression tests at room temperature on the test samples selected. Additionally, some of the samples selected shall be subjected to certain thermal conditions that entail undergoing both elevated and cold temperature cycling. The actual temperature (in the range between -100 degrees F to 250 degrees F) shall be determined by the contractor after the preliminary mechanical properties have been evaluated.

Task C.2 Cyclic Fatigue Tests:

The contractor shall develop fatigue data in terms of S-N curve under uni-axial mechanical tensile loading above and below yield strength of the composite.

Task C.3 Wear Studies:

The contractor shall determine the wear using indentation and/or scratch test. The effect of microstructure of the composite (how SMA fiber and SiC particulates affect wear resistance) on the wear properties in the hybrid composite shall be studied. Wear resistance can be measured in terms of surface roughness after scratch. Surface roughness can be measured using microscopy.

Task C.4 Fracture Toughness:

The contractor shall test to determine the fracture toughness of the hybrid composite experimentally.

Task C.5 Impact Toughness:

The contractor shall determine the impact toughness of the hybrid SMA composite.

Task C.6 Assessment of Manufacturing Methods

Based on the previously conducted efforts, the contractor shall determine the most advantageous manufacturing method(s) that optimizes the five (5) key mechanical properties: (1) static mechanical strength (2) cyclic fatigue (3) wear, (4) fracture toughness, and (5) impact toughness. Using the best manufacturing process selected in Task B.4, the contractor shall apply the analytical model developed in Task A to predict the constitutive response of the SMA composite material.

Task D. Development of Representative Components from SMA Composites

Of the 3 processes described in Task B, the contractor shall determine which process is most suitable for developing a complex three dimensional hybrid composite structural shape to verify the viability of this manufacturing technique for SMA metal matrix composites.

Task D.1

To determine the ability to shape the composite material, the contractor shall make four (4) test samples with the following dimensions: 6 inches long, 4 inches wide (or 4 inches square) and 0.125 inches thick hybrid composite panels using the process selected in Task D. The hybrid composite shall have 8 to 20 per cent titanium-nickel intermetallic shape memory alloy wires

<p style="text-align: center;">CONTINUATION SHEET</p>	<p style="text-align: center;">Reference No. of Document Being Continued</p> <p style="text-align: center;">PIIN/SIIN DAAE07-03-C-L135 MOD/AMD</p>	<p style="text-align: center;">Page 7 of 24</p>
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reinforcement. The reinforcement shall be pre-strained and cut into short fibers with length-to-diameter ratio of 7 to 10 or higher. Small amounts of SiC particulates less than 10 percent shall reinforce the composite for better wear properties.

Task D.2

The contractor shall also make two (three dimensional) track shoe center guides shaped in the general configuration of the track shoe for the Bradley Vehicle System as described in Task D.1.

E. Deliverables

E.1 Status/Management Reports:

The contractor shall prepare quarterly status reports in accordance with CDRL item A001. The status reports shall summarize the work completed; the contract tasks not completed and significant accomplishments, problems or delays. The reports shall include the status of on-going studies and studies completed during the reporting time period. The status reports shall also report all total costs incurred to date, with specific reference to the cost incurred since the last status report.

E.2 Final Technical Report:

The contractor shall prepare a draft final report in accordance with CDRL data item A002 and deliver to the COR in 24 months after the contract award. The COR shall review the draft final report and return it to the contractor within 30 days of receipt of draft with comments. The contractor shall submit one (1) final "Scientific and Technical Report" within thirty (30) days after the receipt of the draft comments and shall incorporate the COR's comments in the final report. A submission of a DD250 shall be required at the time of delivery.

E.3 Software (CD ROM):

In accordance with CDRL data item A003, the contractor shall deliver to the Government on CD ROM, a database (DB) of mechanical properties and mathematical models describing the behavior of Shape Memory Alloy (SMA) hybrid composites. The database shall provide the scientific basis for potential of SMA composites for use in structural applications in Army vehicles. The Contractor shall submit final documentation and the data base with the final "Scientific and Technical Report". This CD-ROM shall be fully operational with Windows 97 or higher or in a format compatible with TARDEC software.

E.4 Presentation Material:

The contractor shall prepare the following audiovisual aids in accordance with the CDRL data item A004 and DID DI-ADM-81373 as described below:

Portable three (3) panel display board approximately 72 in. wide and 30 in. high in size.

Left panel shall include purpose, problem, and procedure.

Center panel shall include title, illustrations, photos, graphics and charts

Right panel shall include results and conclusions

The Contractor shall deliver one (1) draft 3-panel display board, sixteen (16) months after contract award. The COR shall review the 3-panel display board and communicate any comments to the Contractor within thirty (30) days of receipt 3-panel display board and then provide the COR with a final 3-panel display board. The Contractor shall also deliver one (1) draft 3-panel display board 24 months after contract award. The COR shall review the 3-panel display board and communicate any comments to the Contractor within thirty (30) days and then provide the COR with a final 3-panel display board 10 days before the end of the contract.

E.5 Hardware:

At the final review, the contractor shall deliver two (2) representative track shoe center guides and 2 of the 4 test samples as described in Tasks D.1 and D.2.

E.6 Meetings:

E.6.1 Start of Work Meeting:

Start of Work meeting shall be held at TACOM no later than (NLT) 60 days after contract award or as mutually agreeable with the Contracting Officer's Representative (COR). At this meeting, the contractor shall present their planned approach to complete the contract effort. The contractor shall coordinate with the Contracting Officer's Representative (COR) to schedule a specific date and time.

E.6.2 First Year Review:

The contractor shall conduct a review meeting to be held at TACOM at the end of the first year of the program. The purpose of this review is discuss tasks completed, tasks not completed, status of on-going studies, studies completed during the reporting time period and any significant accomplishments, problems or delays. The contract review meeting minutes shall be prepared in contractor's format and shall be supplied to the COR.

E.6.3 Final Review:

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The final review meeting shall be held at TACOM no later than 25 months after the award of the contract. For the final review, the contractor shall provide a comprehensive presentation including the following: (1) the properties of SMA composites developed in this program,(2) constitutive models,(3) an assessment of manufacturing methods and (4) a fundamental understanding of SMA metal matrix composites technology. Also, the contractor shall deliver two (2) track shoe center guides and 2 of the 4 test samples per E.5. The contract review meeting minutes shall be prepared in contractor's format and shall be supplied to the COR.

*** END OF NARRATIVE C 001 ***

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SECTION D - PACKAGING AND MARKING

SECTION D
PACKAGING AND MARKING

- D.1

Packing
- D.1.1

All hardware items deliverable under the contract shall be packaged in accordance with standard commercial practice to insure safe arrival at destination.
- D.2

Marking
- D.2.1

All technical data deliverable under this contract shall be identified by the prime contract number, the name and address of the prime contractor and where applicable, the name of the subcontractor who generated the data.
- D.2.2

All materials or their containers delivered under this contract shall be marked or tagged with the identification of the material or item, the contractor's name and address.

*** END OF NARRATIVE D 003 ***

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SECTION E - INSPECTION AND ACCEPTANCE

	Regulatory Cite	Title	Date
E-1	52.246-9	INSPECTION OF RESEARCH AND DEVELOPMENT (SHORT FORM) SECTION E INSPECTION/ACCEPTANCE	APR/1984

E.1 Final Inspection and Acceptance of all data deliverable under this contract shall be made at Destination by the Contracting Officer or the Contracting Officer's Technical Representative. The determination that the data is complete and conforms to the requirements of the contract will be made by the Contracting Officer's duly authorized representative.

E.1.2 All work required under this contract is subject to inspection and approval by the Contracting Officer's Technical Representative (COTR).

*** END OF NARRATIVE E 001 ***

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SECTION F - DELIVERIES OR PERFORMANCE

	<u>Regulatory Cite</u>	<u>Title</u>	<u>Date</u>
F-1	52.242-15	STOP WORK ORDER--(ALTERNATE I dated APR 1984)	AUG/1989
F-2	52.247-34	F.O.B. DESTINATION	NOV/1991
SECTION F			
DELIVERIES OR PERFORMANCE			
F.1	<u>Period of Performance</u>		
F.1.1	The work under this contract shall be performed from the date of contract award, for a period of twenty-six (26) months.		
F.2	<u>Deliveries/Shipping</u>		
F.2.1	All Drawings and other technical data covered by this contract which have not been previously delivered shall be subject to delivery to the Government upon completion or termination of this contract.		
F.2.2	All technical data/drawings to be delivered pursuant to this contract, shall contain all COTR approved changes.		
F.2.3	All technical data/drawings specified for delivery under this contract or any subcontractor hereunder shall be provided in accordance with the "Rights in Technical Data" clause set forth in this contract. No other clauses, directives, standards, specifications or other implementation shall be deemed directly or by reference to enlarge or diminish such rights.		
F.2.4	The Contractor shall be responsible for shipping all hardware and technical data that cannot be delivered electronically F.O.B Destination to the following address.		
	Commander U.S. Army Tank-automotive & Armaments Command ATTN: Dr. Raju AMSRD-TAR-D MS255 Warren, MI 48397-5000		
F.2.5	See Section J, List of Attachments, Exhibit A. The electronic deliverables shall be submitted in accordance with Exhibit A, entitled "Contract Data Requirements List"(CDRL) DD 1423.		

*** END OF NARRATIVE F 001 ***

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SECTION G - CONTRACT ADMINISTRATION DATA

LINE ITEM	PRON/ AMS CD/		OBLG STAT	ACCOUNTING CLASSIFICATION	JOB ORDER NUMBER	ACCOUNTING STATION		OBLIGATED AMOUNT
	MIPR	ACRN						
0001AA	E142C005EH	AA	2	21 42040000046N6N7EP665502255Y S20113	42C005	W56HZV	\$	380,268.00
	665502M4055							
TOTAL							\$	380,268.00

SERVICE NAME	TOTAL BY ACRN	ACCOUNTING CLASSIFICATION	STATION	OBLIGATED AMOUNT
Army	AA	21 42040000046N6N7EP665502255Y S20113	W56HZV	\$ 380,268.00
TOTAL				\$ 380,268.00

Regulatory Cite	Title	Date
G-1 52.242-4016 (TACOM)	COMMUNICATIONS	MAY/2000

(a) Communications on technical matters pertaining to the contract shall be direct between the contractor and the Technical Representative. Communications for the Technical Representative shall be addressed to:

Name: Dr. Basavaraju Raju
e-mail: rajub@tacom.army.mil

(b) The Administrative Contracting Officer's (ACO) name and email address are also provided if known at this time:

ACO: Ms. Carrie Zunk
e-mail: Carrie.Zunk@dcma.mil

(c) Please see the appointment letters prepared at time of contract award for functions the Technical Representative and ACO will perform on this contract.

[End of Clause] B

G-2	252.201-7000	CONTRACTING OFFICER'S REPRESENTATIVE	DEC/1991
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(a) Definition. Contracting Officer's Representative means an individual designated in accordance with subsection 201.602-2 of the Defense Federal Acquisition Regulation Supplement and authorized in writing by the contracting officer to perform specific technical or administrative functions.

(b) If the Contracting Officer designates a contracting officer's representative (COR), the Contractor will receive a copy of the written designation. It will specify the extent of the COR's authority to act on behalf of the contracting officer. The COR is not authorized to make any commitments or changes that will affect price, quality, quantity, delivery, or any other term or condition of the contract.

[End of Clause]

G-3	52.227-4004 (TACOM)	RELEASE OF INFORMATION	OCT/2003
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The contractor shall ensure that he complies with the requirements of Chapter 5, page 22, paragraph 5-48, of AR 360-1, The Army Public Affairs Program, dated 15 Oct 2000, prior to contemplated release of any procurement information. Approval of the Contracting Officer is required prior to release of any such information. AR 360-1 may be found at http://www.usapa.army.mil/pdffiles/r360_1.pdf.

[End of clause]

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G-4	52.232-4005	INVOICE INFORMATION REQUIREMENT	JAN/1988
	(TACOM)		

On each payment request submitted, the Contractor shall identify each affected Contract Line Item Number (CLIN), sub-CLIN, and/or work directive, together with the related dollar amounts. This requirement does not diminish or restrict any other requirement of this contract.

* * G.1 CONTRACTOR: SPECIAL BILLING INSTRUCTIONS: * *

G.1.1 The Contractor shall bill to the six-digit Sub-Line Item Number (SLIN) level and ACRN under the four-digit Contract Line Item Number (CLIN), see Section B, for which the work effort was performed.

G.1.2 If multiple SLINs exist on the same four-digit major CLIN, the Contractor shall determine which six-digit SLIN contains the oldest fiscal year money and invoice against the SLIN containing the oldest money, until fully billed.

G.1.3. To determine the fiscal year of funds, refer to the "Job Order Number" (JON) column that applies to ALL funding under the four digit CLIN, as shown in Section G - Contract Administration Data. The first digit of the JON represents the fiscal year. (For example, CLIN 0001 is funded by SLINs 0001AA and 0001AB. If JON: 22C334 is associated with 0001AA and JON: 32C205, associated with 0001AB, SLIN 0001AA is FY 2002 funding and shall be invoiced prior to invoicing against SLIN 0001AB, which is FY 2003 funding.)

* * G.2 DFAS: SPECIAL PAYMENT INSTRUCTIONS: * *

DFAS will make payments as billed by the contractor.

*** END OF NARRATIVE G 001 ***

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SECTION H - SPECIAL CONTRACT REQUIREMENTS

	Regulatory Cite	Title	Date
H-1	252.204-7000	DISCLOSURE OF INFORMATION	DEC/1991
H-2	252.205-7000	PROVISION OF INFORMATION TO COOPERATIVE AGREEMENT HOLDERS	DEC/1991
H-3	252.225-7001	BUY AMERICAN ACT AND BALANCE OF PAYMENTS PROGRAM	APR/2003
H-4	252.225-7002	QUALIFYING COUNTRY SOURCES AS SUBCONTRACTORS	APR/2003
H-5	252.225-7004	REPORTING OF CONTRACT PERFORMANCE OUTSIDE THE UNITED STATES	APR/2003
H-6	252.225-7009	DUTY-FREE-ENTRY--QUALIFYING COUNTRY SUPPLIES (END PRODUCTS AND COMPONENTS)	AUG/2000
H-7	252.227-7036	DECLARATION OF TECHNICAL DATA CONFORMITY	JAN/1997
H-8	252.227-7037	VALIDATION OF RESTRICTIVE MARKINGS ON TECHNICAL DATA	SEP/1999
H-9	252.231-7000	SUPPLEMENTAL COST PRINCIPLES	DEC/1991
H-10	252.235-7011	FINAL SCIENTIFIC OR TECHNICAL REPORT	SEP/1999
H-11	252.242-7004	MATERIAL MANAGEMENT AND ACCOUNTING SYSTEM	DEC/2000
H-12	252.246-7000	MATERIAL INSPECTION AND RECEIVING REPORT	MAR/2003
H-13	252.246-7001	WARRANTY OF DATA	DEC/1991
H-14	252.227-7039	PATENTS -- REPORTING OF SUBJECT INVENTIONS	APR/1990

The Contractor shall furnish the Contracting Officer the following:

(a) Interim reports every twelve (12) months (or such longer period as may be specified by the Contracting Officer) from the date of the contract, listing subject inventions during that period and stating that all subject inventions have been disclosed or that there are no such inventions.

(b) A final report, within three (3) months after completion of the contracted work, listing all subject inventions or stating that there were no such inventions.

(c) Upon request, the filing date, serial number and title, a copy of the patent application and patent number, and issue data for any subject invention for which the Contractor has retained title.

(d) Upon request, the Contractor shall furnish the Government an irrevocable power to inspect and make copies of the patent application file.

(End of clause)

H-15	52.204-4005 (TACOM)	REQUIRED USE OF ELECTRONIC CONTRACTING	DEC/2002
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(a) All contract awards, modifications and delivery orders issued by TACOM will be issued electronically. The contractor has the option to receive these actions either via the Worldwide Web (WWW) or Electronic Data Interchange (EDI). Many provisions and clauses appear "by reference," meaning only clause titles and regulation site are listed; their full texts can be found at the website <http://farsite.hill.af.mil/>

(b) In order to be eligible to receive an award under this solicitation, the successful offeror must be registered with the Department of Defense (DOD) Central Contractor Registration (CCR). The CCR registration process may be done electronically at the World Wide Web (WWW) site: <http://www.ccr.gov/>. (In order to be registered to use EDI, you must use the long form for registration. Certification information, including information on the EDI 838 TPP, must be furnished to the Contracting Officer within 60 calendar days after contract award to complete networking requirements within the Government.)

(c) Worldwide Web Distribution. The contractor will receive an electronic Notice of the Award, Modification, or Delivery Order via e-mail. If you choose the WWW option, you must download the file from the appropriate TACOM webpage:

Warren: http://contracting.tacom.army.mil/awards_official.htm
Rock Island: <http://aais.ria.army.mil/AAIS/AWDINFO/index.htm>
Picatinny: <http://procnet.pica.army.mil/Contracts/Index.htm>
Red River Army Depot: <http://www.redriver.army.mil/contracting/Awards>
Anniston Army Depot: <http://www.anadprocnet.army.mil>

(d) Electronic Data Interchange. If you choose to receive contract awards, modifications and delivery orders through EDI, they will be delivered electronically via the Federal Acquisition Network (FACNET). Federal Standard Version 3050 of Standard X12 from the American National Standards Institute (ANSI) will be used as the format for these electronic transactions.

(1) You must complete the EDI 838 Trading Partner Profile, and must agree (i) to subcontract with a DoD certified VAN or

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Value Added Service (VAS) provider, or (ii) to become DoD certified as a Value Added Network (VAN). The EDI 838 Training Partner Profile is contained in the basic CCR registration form and includes portions of the registration form which are titled "Optional".

(2) You must select a VAN from the official DoD approved list. DoD Certified VANs are listed at <http://www.acq.osd.mil/ec/ecip/index.htm> . If your VAN is later removed from the official list, or if you voluntarily drop your initially selected VAN, then you must switch to a VAN that remains on the official DoD approved list. You must maintain an active account on a DoD approved VAN for the entire duration of the contract, beginning no later than the 60th day after award.

(e) Unless otherwise specified elsewhere in the contract, all data items you are required to provide under this contract must be submitted electronically. Acceptable formats include:

- (1) Microsoft* 97 Office Products (TACOM can currently read OFFICE 97* and lower.): Word, Excel, Powerpoint, or Access
- (2) 100 OR 250 MEGABYTE ZIP*-DISK, 3 1/2 INCH DISK, OR 650 MEGABYTE CD ROM
- (3) E-MAIL (Maximum size of each e-mail message is be three and one-half (3.5) megabytes).
- (4) Other electronic formats. Before submitting your data in any other electronic format, please e-mail the buyer identified on the face of the contract, with e-mail copy-furnished to amsta-idq@tacom.army.mil, to obtain a decision as to the format's acceptability. This e-mail must be received by the buyer not later than ten calendar days before the required data submission date.

NOTE: The above formats may be submitted in compressed form using self-extracting files.

(f) Additional information can be obtained by sending a message to: acqcenweb@tacom.army.mil or by calling (586) 574-7059.
[End of Clause]

H-16	52.216-4008	STATUS OF FUNDS ON COST REIMBURSEMENT CONTRACTS/CLINS	JUN/1989
	(TACOM)		

(a) The Contractor shall review the funding as it relates to work performed on the cost-reimbursement Contract Line Item Numbers (CLINs) under this contract and shall provide to the Procuring Contracting Officer (PCO) a written determination of what, if any, funds are excess to requirements (leaving a reasonable amount for final overhead rate negotiations and other reasonably predicted requirements) and are available for deobligation. This review shall be coordinated with the Administrative Contracting Officer (ACO), and the written determination shall be accomplished within 120 days of completion of performance under the CLIN. The report shall be prepared in terms of dollars available per Purchase Request Order Number (PRON), unless requested otherwise by the PCO.

(b) This report may be requested in writing by the PCO on additional occasions during the course of performance of work on cost-reimbursable CLINS contained in this contract. On such occasions, the written report shall be provided to the PCO within 14 days of Contractor receipt of the written request.

(End of clause)

H-17	52.246-4026	LOCAL ADDRESSES FOR DD FORM 250	MAR/2002
	(TACOM)		

(a) The contractor must provide a copy of each Material Inspection and Receiving Report (DD 250) pertaining to this contract, to the addresses given below, using either of the following methods:

- (1) Our first preference is for you to use electronic mail (e-mail), using the following e-mail address:

DD250@tacom.army.mil
- (2) Our second preference is for you to use data facsimile (datafax) transmission, using this fax number:

(586) 574-7552 and use "DD250 mailbox" in the "to:" block of your fax cover or header sheet.

In either method, do not mix DD250s from more than one contract in a single transmmission. That is, you may submit multiple DD250s in a single transmission, but they must all be against the same contract.

(b) These copies meet the requirements for the Purchasing Office copy and the Army Inventory Control Manager copy listed in tables 1 and 2 of DFARS Appendix F.

(c) The DD250 form may be found, in three different formats, on the World Wide Web at <http://web1.whs.osd.mil/icdhome/DD-0999.htm>

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[End of Clause]

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SECTION I - CONTRACT CLAUSES

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: <http://farsite.hill.af.mil/>

[End of Clause]

	Regulatory Cite	Title	Date
I-1	52.202-1	DEFINITIONS	DEC/2001
I-2	52.203-3	GRATUITIES	APR/1984
I-3	52.203-5	COVENANT AGAINST CONTINGENT FEES	APR/1984
I-4	52.203-6	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT	JUL/1995
I-5	52.203-7	ANTI-KICKBACK PROCEDURES	JUL/1995
I-6	52.203-8	CANCELLATION, RESCISSION AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY	JAN/1997
I-7	52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY	JAN/1997
I-8	52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	JUN/2003
I-9	52.204-4	PRINTING/COPYING DOUBLE-SIDED ON RECYCLED PAPER	AUG/2000
I-10	52.209-6	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT	JUL/1995
I-11	52.211-15	DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS	SEP/1990
I-12	52.215-2	AUDIT AND RECORDS - NEGOTIATIONS	JUN/1999
I-13	52.215-8	ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT	OCT/1997
I-14	52.215-10	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA	OCT/1997
I-15	52.215-12	SUBCONTRACTOR COST OR PRICING DATA	OCT/1997
I-16	52.215-14	INTEGRITY OF UNIT PRICES	OCT/1997
I-17	52.215-15	PENSION ADJUSTMENTS AND ASSET REVERSIONS	DEC/1998
I-18	52.215-17	WAIVER OF FACILITIES CAPITAL COST OF MONEY	OCT/1997
I-19	52.215-18	REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS (PRB) OTHER THAN PENSIONS	OCT/1997
I-20	52.215-19	NOTIFICATION OF OWNERSHIP CHANGES	OCT/1997
I-21	52.216-7	ALLOWABLE COST AND PAYMENT	DEC/2002
I-22	52.216-8	FIXED FEE	MAR/1997
I-23	52.219-6	NOTICE OF TOTAL SMALL BUSINESS SET-ASIDE	JUN/2003
I-24	52.219-8	UTILIZATION OF SMALL BUSINESS CONCERNS	OCT/2000
I-25	52.219-14	LIMITATIONS ON SUBCONTRACTING	DEC/1996
I-26	52.222-1	NOTICE TO THE GOVERNMENT OF LABOR DISPUTES	FEB/1997
I-27	52.222-4	CONTRACT WORK HOURS AND SAFETY STANDARDS ACT--OVERTIME COMPENSATION	SEP/2000
I-28	52.222-20	WALSH-HEALEY PUBLIC CONTRACTS ACT	DEC/1996
I-29	52.222-21	PROHIBITION OF SEGREGATED FACILITIES	FEB/1999
I-30	52.222-26	EQUAL OPPORTUNITY	APR/2002
I-31	52.222-35	AFFIRMATIVE ACTION FOR DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA	DEC/2001
I-32	52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES	JUN/1998
I-33	52.222-37	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS	DEC/2001
I-34	52.223-6	DRUG FREE WORKPLACE	MAY/2001
I-35	52.223-14	TOXIC CHEMICAL RELEASE REPORTING	AUG/2003
I-36	52.225-8	DUTY-FREE ENTRY	FEB/2000
I-37	52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES	JUN/2003
I-38	52.226-1	UTILIZATION OF INDIAN ORGANIZATIONS AND INDIAN-OWNED ECONOMIC ENTERPRISES	JUN/2000
I-39	52.227-1	AUTHORIZATION AND CONSENT (ALTERNATE I dated April 1984)	JUL/1995
I-40	52.227-2	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT	AUG/1996
I-41	52.227-11	PATENT RIGHTS--RETENTION BY THE CONTRACTOR (SHORT FORM)	JUN/1997
I-42	52.228-7	INSURANCE--LIABILITY TO THIRD PERSONS	MAR/1996
I-43	52.232-9	LIMITATION ON WITHHOLDING OF PAYMENTS	APR/1984
I-44	52.232-17	INTEREST	JUN/1996
I-45	52.232-22	LIMITATION OF FUNDS	APR/1984
I-46	52.232-23	ASSIGNMENT OF CLAIMS	JAN/1986
I-47	52.232-25	PROMPT PAYMENT	FEB/2002
I-48	52.232-33	PAYMENT BY ELECTRONIC FUNDS TRANSFER--CENTRAL CONTRACTOR REGISTRATION	OCT/2003
I-49	52.233-1	DISPUTES	JUL/2002

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	Regulatory Cite	Title	Date
I-50	52.233-3	PROTEST AFTER AWARD -- (ALTERNATE I, dated JUN 1985)	AUG/1996
I-51	52.242-1	NOTICE OF INTENT TO DISALLOW COSTS	APR/1984
I-52	52.242-3	PENALTIES FOR UNALLOWABLE COSTS	MAY/2001
I-53	52.242-4	CERTIFICATION OF INDIRECT COSTS	JAN/1997
I-54	52.242-13	BANKRUPTCY	JUL/1995
I-55	52.243-2	CHANGES--COST-REIMBURSEMENT (ALTERNATE V, dated April 1984))	AUG/1987
I-56	52.244-2	SUBCONTRACTS (ALT I--AUG 1998)	AUG/1998
I-57	52.244-5	COMPETITION IN SUBCONTRACTING	DEC/1996
I-58	52.245-5	GOVERNMENT PROPERTY (COST-REIMBURSEMENT, TIME-AND-MATERIAL, OR LABOR-HOUR CONTRACTS) (Deviation, per DAR Tracking Number 99-00008, 13 July 99)	JUN/2003
I-59	52.246-23	LIMITATION OF LIABILITY	FEB/1997
I-60	52.249-6	TERMINATION (COST-REIMBURSEMENT)	SEP/1996
I-61	52.249-14	EXCUSABLE DELAYS	APR/1984
I-62	52.253-1	COMPUTER GENERATED FORMS	JAN/1991
I-63	252.203-7001	PROHIBITION ON PERSONS CONVICTED OF FRAUD OR OTHER DEFENSE CONTRACT-RELATED FELONIES	MAR/1999
I-64	252.204-7003	CONTROL OF GOVERNMENT PERSONNEL WORK PRODUCT	APR/1992
I-65	252.209-7000	ACQUISITION FROM SUBCONTRACTORS SUBJECT TO ON-SITE INSPECTION UNDER THE INTERMEDIATE-RANGE NUCLEAR FORCES (INF) TREATY	NOV/1995
I-66	252.209-7004	SUBCONTRACTING WITH FIRMS THAT ARE OWNED OR CONTROLLED BY THE GOVERNMENT OF A TERRORIST COUNTRY per DoD interim rule, Federal Register 27 Mar 98	MAR/1998
I-67	252.211-7005	SUBSTITUTIONS FOR MILITARY OR FEDERAL SPECIFICATIONS AND STANDARDS	FEB/2003
I-68	252.215-7000	PRICING ADJUSTMENTS	DEC/1991
I-69	252.215-7002	COST ESTIMATING SYSTEM REQUIREMENTS	OCT/1998
I-70	252.225-7004	REPORTING OF CONTRACT PERFORMANCE OUTSIDE THE UNITED STATES	APR/2003
I-71	252.225-7012	PREFERENCE FOR CERTAIN DOMESTIC COMMODITIES	FEB/2003
I-72	252.225-7014	PREFERENCE FOR DOMESTIC SPECIALTY METALS (ALT 1)	APR/2003
I-73	252.225-7016	RESTRICTION ON ACQUISITION OF BALL AND ROLLER BEARINGS	APR/2003
I-74	252.225-7025	RESTRICTION ON ACQUISITION OF FORGINGS	APR/2003
I-75	252.225-7031	SECONDARY ARAB BOYCOTT OF ISRAEL	APR/2003
I-76	252.227-7016	RIGHTS IN BID OR PROPOSAL INFORMATION	JUN/1995
I-77	252.227-7017	IDENTIFICATION AND ASSERTION OF USE, RELEASE, OR DISCLOSURE RESTRICTIONS	JUN/1995
I-78	252.227-7018	RIGHTS IN NONCOMMERCIAL TECHNICAL DATA AND COMPUTER SOFTWARE-- SMALL BUSINESS INNOVATIVE RESEARCH (SBIR) PROGRAM	JUN/1995
I-79	252.227-7019	VALIDATION OF ASSERTED RESTRICTIONS--COMPUTER SOFTWARE	JUN/1995
I-80	252.227-7030	TECHNICAL DATA--WITHHOLDING OF PAYMENT	MAR/2000
I-81	252.227-7034	PATENTS--SUBCONTRACTS	APR/1984
I-82	252.227-7037	VALIDATION OF RESTRICTIVE MARKINGS ON TECHNICAL DATA	SEP/1999
I-83	252.242-7000	POSTAWARD CONFERENCE	DEC/1991
I-84	252.244-7000	SUBCONTRACTS FOR COMMERCIAL ITEMS AND COMMERCIAL COMPONENTS (DoD CONTRACTS)	MAR/2000
I-85	52.219-4	NOTICE OF PRICE EVALUATION FOR HUBZONE SMALL BUSINESS CONCERNS	JAN/1999

(a) Definition. HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) Evaluation preference.

(1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except-

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding

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or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer. These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) Waiver of evaluation preference. A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

[] Offer elects to waive the evaluation preference.

(d) Agreement. A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a nonmanufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants;

(f) A HUBZone small business concern nonmanufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

[End of Clause]

I-86 52.223-11 OZONE-DEPLETING SUBSTANCES MAY/2001

(a) Definition. Ozone-depleting substance, as used in this clause, means any substance the Environmental Protection Agency designates in 40 CFR part 82 as--

(1) Class I, including, but not limited to, chlorofluorocarbons, halons, carbon tetrachloride, and methyl chloroform; or

(2) Class II, including but not limited to, hydrochlorofluorocarbons.

(b) The Contractor shall label products which contain or are manufactured with ozone-depleting substances in the manner and to the extent required by 42 U.S.C. 7671j(b), (c), and (d) and 40 CFR Part 82, Subpart E, as follows:

WARNING: Contains (or manufactured with, if applicable) _____ * _____, a substance(s) which harm(s) public health and environment by destroying ozone in the upper atmosphere.

*The Contractor shall insert the name of the substance(s).

[End of Clause]

I-87 52.252-6 AUTHORIZED DEVIATIONS IN CLAUSES APR/1984

(a) The use in this solicitation or contract of any Federal Acquisition Regulation (48 CFR Chapter 1) clause with an authorized deviation is indicated by the addition of (DEVIATION) after the date of the clause.

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(b) The use in this solicitation or contract of any DoD FAR Supplement (DFARS) (48 CFR 2) clause with an authorized deviation is indicated by the addition of (DEVIATION) after the name of the regulation.

[End of Clause]

I-88 252.204-7004 REQUIRED CENTRAL CONTRACTOR REGISTRATION NOV/2001

- (a) Definitions. As used in this clause--
- (1) Central Contractor Registration (CCR) database means the primary DoD repository for contractor information required for the conduct of business with DoD.
- (2) Data Universal Numbering System (DUNS) number means the 9-digit number assigned by Dun and Bradstreet Information Services to identify unique business entities.
- (3) Data Universal Numbering System +4 (DUNS+4) number means the DUNS number assigned by Dun and Bradstreet plus a 4-digit suffix that may be assigned by a parent (controlling) business concern. This 4-digit suffix may be assigned at the discretion of the parent business concern for such purposes as identifying subunits or affiliates of the parent business concern.
- (4) Registered in the CCR database means that all mandatory information, including the DUNS number or the DUNS+4 number, if applicable, and the corresponding Commercial and Government Entity (CAGE) code, is in the CCR database; the DUNS number and the CAGE code have been validated; and all edits have been successfully completed.

- (b)
- (1) By submission of an offer, the offeror acknowledges the requirement that a prospective awardee must be registered in the CCR database prior to award, during performance, and through final payment of any contract resulting from this solicitation, except for awards to foreign vendors for work to be performed outside the United States.
- (2) The offeror shall provide its DUNS or, if applicable, its DUNS+4 number with its offer, which will be used by the Contracting Officer to verify that the offeror is registered in the CCR database.
- (3) Lack of registration in the CCR database will make an offeror ineligible for award.
- (4) DoD has established a goal of registering an applicant in the CCR database within 48 hours after receipt of a complete and accurate application via the Internet. However, registration of an applicant submitting an application through a method other than the Internet may take up to 30 days. Therefore, offerors that are not registered should consider applying for registration immediately upon receipt of this solicitation.

- (c) The Contractor is responsible for the accuracy and completeness of the data within the CCR, and for any liability resulting from the Government's reliance on inaccurate or incomplete data. To remain registered in the CCR database after the initial registration, the Contractor is required to confirm on an annual basis that its information in the CCR database is accurate and complete.
- (d) Offerors and contractors may obtain information on registration and annual confirmation requirements by calling 1-888-227-2423, or via the Internet at <http://www.ccr.gov>.

[End of Clause]

I-89 252.225-7015 PREFERENCE FOR DOMESTIC HAND OR MEASURING TOOLS DEC/1991

The Contractor agrees to deliver under this contract only hand or measuring tools produced in the United States or its possessions.

(End of clause)

I-90 252.247-7023 TRANSPORTATION OF SUPPLIES BY SEA MAY/2002

- (a) Definitions. As used in this clause--
- (1) Components means articles, materials, and supplies incorporated directly into end products at any level of manufacture, fabrication, or assembly by the Contractor or any subcontractor.
- (2) Department of Defense (DoD) means the Army, Navy, Air Force, Marine Corps, and defense agencies.

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN DAAE07-03-C-L135 MOD/AMD	Page 21 of 24
Name of Offeror or Contractor: NEWAZ TECHNOLOGIES		

(3) Foreign flag vessel means any vessel that is not a U.S.-flag vessel.

(4) Ocean transportation means any transportation aboard a ship, vessel, boat, barge, or ferry through international waters.

(5) Subcontractor means a supplier, materialman, distributor, or vendor at any level below the prime contractor whose contractual obligation to perform results from, or is conditioned upon, award of the prime contract and who is performing any part of the work or other requirement of the prime contract. However, effective May 1, 1996, the term does not include a supplier, materialman, distributor, or vendor of commercial items or commercial components.

(6) Supplies means all property, except land and interests in land, that is clearly identifiable for eventual use by or owned by the DoD at the time of transportation by sea.

(i) An item is clearly identifiable for eventual use by the DoD if, for example, the contract documentation contains a reference to a DoD contract number or a military destination.

(ii) Supplies includes (but is not limited to) public works; buildings and facilities; ships; floating equipment and vessels of every character, type, and description, with parts, subassemblies, accessories, and equipment; machine tools; material; equipment; stores of all kinds; end items; construction materials; and components of the foregoing.

(7) U.S.-flag vessel means a vessel of the United States or belonging to the United States, including any vessel registered or having national status under the laws of the United States.

(b)

(1) The Contractor shall use U.S.-flag vessels when transporting any supplies by sea under this contract.

(2) A subcontractor transporting supplies by sea under this contract shall use U.S.-flag vessels if-

(i) This contract is a construction contract; or

(ii) The supplies being transported are-

(A) Noncommercial items; or

(B) Commercial items that-

(1) The Contractor is reselling or distributing to the Government without adding value (generally, the Contractor does not add value to items that it subcontracts for f.o.b. destination shipment);

(2) Are shipped in direct support of U.S. military contingency operations, exercises, or forces deployed in humanitarian or peacekeeping operations; or

(3) Are commissary or exchange cargoes transported outside of the Defense Transportation System in accordance with 10 U.S.C. 2643.

(c) The Contractor and its subcontractors may request that the Contracting Officer authorize shipment in foreign-flag vessels, or designate available U.S.-flag vessels, if the Contractor or a subcontractor believes that--

(1) U.S.-flag vessels are not available for timely shipment;

(2) The freight charges are inordinately excessive or unreasonable; or

(3) Freight charges are higher than charges to private persons for transportation of like goods.

(d) The Contractor must submit any request for use of other than U.S.-flag vessels in writing to the Contracting Officer at least 45 days prior to the sailing date necessary to meet its delivery schedules. The Contracting Officer will process requests submitted after such date(s) as expeditiously as possible, but the Contracting Officer's failure to grant approvals to meet the shipper's sailing date will not of itself constitute a compensable delay under this or any other clause of this contract. Requests shall contain at a minimum--

(1) Type, weight, and cube of cargo;

(2) Required shipping date;

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN DAAE07-03-C-L135 MOD/AMD	Page 22 of 24
Name of Offeror or Contractor: NEWAZ TECHNOLOGIES		

(3) Special handling and discharge requirements;

(4) Loading and discharge points;

(5) Name of shipper and consignee;

(6) Prime contract number; and

(7) A documented description of efforts made to secure U.S.-flag vessels, including points of contact (with names and telephone numbers) with at least two U.S.-flag carriers contacted. Copies of telephone notes, telegraphic and facsimile message or letters will be sufficient for this purpose.

(e) The Contractor shall, within 30 days after each shipment covered by this clause, provide the Contracting Officer and the Division of National Cargo, Office of Market Development, Maritime Administration, U.S. Department of Transportation, Washington, DC 20590, one copy of the rated on board vessel operating carrier's ocean bill of lading, which shall contain the following information--

(1) Prime contract number;

(2) Name of vessel;

(3) Vessel flag of registry;

(4) Date of loading;

(5) Port of loading;

(6) Port of final discharge;

(7) Description of commodity;

(8) Gross weight in pounds and cubic feet if available;

(9) Total ocean freight in U.S. dollars; and

(10) Name of the steamship company.

(f) The Contractor shall provide with its final invoice under this contract a representation that to the best of its knowledge and belief--

(1) No ocean transportation was used in the performance of this contract;

(2) Ocean transportation was used and only U.S.-flag vessels were used for all ocean shipments under the contract;

(3) Ocean transportation was used, and the Contractor had the written consent of the Contracting Officer for all non-U.S.-flag ocean transportation; or

(4) Ocean transportation was used and some or all of the shipments were made on non-U.S.-flag vessels without the written consent of the Contracting Officer. The Contractor shall describe these shipments in the following format:

ITEM DESCRIPTION	CONTRACT LINE ITEMS	QUANTITY	TOTAL
---------------------	------------------------	----------	-------

(g) If the final invoice does not include the required representation, the Government will reject and return it to the Contractor as an improper invoice for the purposes of the Prompt Payment clause of this contract. In the event there has been unauthorized use of non-U.S.-flag vessels in the performance of this contract, the Contracting Officer is entitled to equitably adjust the contract, based on the unauthorized use.

(h) In the award of subcontracts for the types of supplies described in paragraph (b)(2) of this clause, the Contractor shall flow down the requirements of this clause as follows:

(1) The Contractor shall insert the substance of this clause, including this paragraph (h) in all subcontracts that exceed the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation.

(2) The Contractor shall insert the substance of paragraphs (a) through (e) of this clause, and this paragraph (h), in

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN DAAE07-03-C-L135 MOD/AMD	Page 23 of 24
Name of Offeror or Contractor: NEWAZ TECHNOLOGIES		

subcontracts that are at or below the simplified acquisition threshold in Part 2 of the Federal Acquisition Regulation.

[End of Clause]

I-91	52.204-4009 (TACOM)	MANDATORY USE OF CONTRACTOR TO GOVERNMENT ELECTRONIC COMMUNICATION	JUN/1999
------	------------------------	--------------------------------------------------------------------	----------

(a) All references in the contract to the submission of written documentation shall mean electronic submission. All electronic submissions shall be in the formats and media described in the "Electronic Quotations/Offers/Bids Required in Response to this Request for Quotations/Proposals/Bids" clause elsewhere in this document. (See Section K for commercial acquisitions, Section L for RFPs, and Section I for RFQs.)

(b) This shall include all written unclassified communications between the Government and the Contractor except contract awards and contract modifications which shall be posted on the internet. Return receipt shall be used if a commercial application is available. Classified information shall be handled in full accordance with the appropriate security requirements.

(c) In order to be contractually binding, all Government communications requiring a Contracting Officer signature must be sent from the Contracting Officer's e-mail address. The Contractor shall designate the personnel with signature authority who can contractually bind the contractor. All binding contractor communication shall be sent from this contractor e-mail address(es).

(d) Upon award, the Contractor shall provide the Contracting Officer with a list of e-mail addresses for all administrative and technical personnel assigned to this contract.

(e) Unless exempted by the Procuring Contracting Officer in writing, all unclassified written communication after contract award shall be transmitted electronically.

[End of Clause]

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 24 of 24
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Name of Offeror or Contractor: NEWAZ TECHNOLOGIES

SECTION J - LIST OF ATTACHMENTS

<u>List of</u> <u>Addenda</u>	<u>Title</u>	<u>Date</u>	<u>Number</u> <u>of Pages</u>	<u>Transmitted By</u>
Exhibit A	CONTRACT DATA REQUIREMENTS (DD1423)		006	
Attachment 001	INSTRUCTIONS FOR SF 298		001	

CONTRACT DATA REQUIREMENT LIST

Form Approval OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 440 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

1. DATA ITEM NO.: A001
2. TITLE OF DATA ITEM.: Contract Progress Status Reports & Management Reports
3. SUBTITLE: SBIR Phase II Program Reports
4. AUTHORITY: DI-MGMT-80227
5. CONTRACT REFERENCE: E.1
6. REQUIRING OFFICE...: AMSRD-TAR-D 9. DIST. STATEMENT REQUIRED.: 12. DATE OF FIRST SUB.: See Block 16
7. DD250 REQ....YES.....: 10. FREQUENCY.....: See Block 16 13. DATE OF SUBS. SUB.: See Block 16
8. APP CODE.....: 11. AS OF DATE.....: See Block 16

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES:	Draft	FINAL
Dr. Basavaraju B. Raju, Contracting Officer's Rep (COR), E-mail: rajub@tacom.army.mil			1	1
Ms. Mary West, Contract Specialist, E-mail: westm@tacom.army.mil				1
Ms. Carrie Zunk, ACO, E-mail: Carrie.Zunk@dcma.mil				1
		TOTAL:	1	3

Mailing address:

U.. S. Army Tank-automotive and Armaments Command
ATTN: Dr Raju, AMSRD-TAR-D, Mail Stop 255
6501 E. 11 Mile Road
Warren, MI 48397-5000

16. REMARKS: The contractor shall provide quarterly status reports (total of 8). The status reports will briefly summarize work completed to date on the contract with specific reference to the contract tasks completed, tasks not completed, status of on-going studies, studies completed during the reporting time period and any significant accomplishments, problems or delays. The contract review meetings minutes shall be provided for all of the government attended meetings. The status reports will also report total costs incurred to date, with specific reference to the costs incurred since the last status report.

b. Complete the reports in accordance with (IAW) Data Item Description (DID) DI-MGMT-80227, "Contractor's Progress, Status, and Management Report." The COR is responsible for accepting or rejecting the "Contractor's Progress, Status, and Management Reports." See DID DI-MGMT-80227, at the Internet address below, for instructions on completing the required report.

<http://astimage.daps.dla.mil/docimages/0001\48\17\DI80227.PD8>

c. Prepare the reports in the Contractor's format. Submit the reports using any of the following electronic formats:

(1) Files readable using these Microsoft* 97 Office Products (TACOM can currently read OFFICE 97* and lower): Word, Excel, PowerPoint, or Access. Spreadsheets must be sent in a file format that includes all formulae, macro and format information. Print image is not acceptable. Executable files, other than self-extracting compressed files, are unacceptable.

(2) Files in Adobe PDF (Portable Document Format). Scanners should be set to 200 dots per inch.

(3) Files in HTML (Hypertext Markup Language). HTML documents must not contain active links to live Internet sites or pages. All linked information must be contained within your electronic report, and be accessible offline.

(4) Other electronic formats. Before preparing your report in any other electronic format, please e-mail the COR, with an e-mail copy-furnished to amsta-idq@tacom.army.mil, to obtain a decision as to the format's acceptability. This e-mail must be received by the COR not later than ten calendar days before the draft report's due date.

All alternate methods must be a no cost to the Government.

NOTES: (a) The above formats may be submitted in compressed form using self-extracting files.

(b) Files may be read-only, password protected.

d. Acceptable media: The Contractor shall submit reports via e-mail. If e-mail is not workable, other acceptable media include 100 or 250 Megabyte Zip*-disk, 3 inch disk, or 650 megabyte CD-ROM. Identify the software application and version used to create each file submitted.

(1) E-MAIL. Maximum size of each e-mail message shall be three and one-half (3.5) megabytes. Any compressed files must be self-extracting, and you must provide appropriate instructions. You may use multiple e-mail messages if necessary, however, you must annotate the subject lines in this manner: "Message 1 of 3, 2 of 3, 3 of 3."

(2) 100 or 250 MEGABYTE ZIP*-DISK, 3 INCH DISK, OR 650 MEGABYTE CD ROM via U.S. Mail or other carrier. The Contractor shall label and all submitted disks with the Contract number, the Contractor's name, address and a contact's phone number.

NOTE: Please select only one medium by which to transmit each report. For instance, do not submit a report via e-mail and 100 megabyte Zip*-disk.

* Registered Trademark

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE :

MOD/AMD

ATT/EXH ID

PAGE 3

1. DATA ITEM NO.: A002
 2. TITLE OF DATA ITEM.: Final Technical Report
 3. SUBTITLE: SBIR Phase II Draft and Final Report
 4. AUTHORITY: DI-MISC-80711A
 5. CONTRACT REFERENCE: E.2
 6. REQUIRING OFFICE.: AMSRD-TAR-D DIST.STATEMENT REQUIRED.: 12. DATE OF FIRST SUB. See Block 16
 7. DD250 REQ.: See Block 16 below 13. DATE OF SUBS. SUB.: See Block 16
 8. APP CODE.....: . AS OF DATE.....: See Block 16

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES: Draft	Final
Dr. Basavaraju B. Raju, Contracting Officer's Rep (COR), E-mail: rajub@tacom.army.mil		1	1
Ms. Mary West, Contract Specialist, E-mail: westm@tacom.army.mil			1
Ms. Carrie Zunk, ACO, E-mail: Carrie.Zunk@dcma.mil			1
		TOTAL	3

Mailing address:

U. S. Army Tank-automotive and Armaments Command
 ATTN: Dr Raju, AMSRD-TAR-D, Mail Stop 255
 6501 E. 11 Mile Road
 Warren, MI 48397-5000

16. REMARKS

a. The Contractor shall deliver one (1) draft "Scientific and Technical Report," twenty-four (24) months after contract award. The draft report shall include a completed Standard Form (SF) 298 (Report Documentation Page) as the report's cover sheet. The COR shall review the draft report and return it to the Contractor within thirty (30) days of receipt with comments. The Contractor shall incorporate the CORs comments and submit one (1) final "Scientific and Technical Report" (with the completed SF 298) within thirty (30) days after receipt of draft comments.

b. Complete the reports IAW DID DI-MISC 80711A, "Scientific and Technical Reports." The COR is responsible for accepting or rejecting the draft and final reports, and for submitting the approved final report to the Defense Technical Information Center (DTIC), in Ft. Belvoir, VA. See the data item description (DI-MISC-80711A), at the Internet address below, for instructions on completing the required report.

<http://astimage.daps.dla.mil/docimages/0002\27\88\80711A.PD4>

You may download the SF 298 form, from the following Internet address:

<http://www.dtic.mil/dtic/forms/sf298template.doc>

You may download basic instructions for completing the SF 298 form, from the following Internet address:

http://www.dtic.mil/dtic/forms/SF298_MS67.doc

Here are some additional instructions for completing the SF 298 form, that apply when submitting reports under the SBIR Program:

For each unclassified report, the Contractor shall fill in Block 12a (Distribution/Availability Statement) of the SF 298 with one of the following statements:

(a) Approved for public release; distribution unlimited.

(b) Distribution authorized to U.S. Government Agencies only; contains proprietary information

Note: After reviewing the Contractor's entry in Block 12a, TACOM has final responsibility for assigning a distribution statement.

Block 13 (Abstract) of the SF 298 must include the first sentence, "Report developed under SBIR contract for topic A02-227." The abstract must identify the purpose of the work and briefly describe the work carried out, the finding or results, and the potential applications of the effort. Since the Department of Defense (DOD) will be publishing the abstract, it must not contain any proprietary or classified data.

Block 14 (Subject Terms) of the SF 298 must include the term "SBIR Report."

d. Prepare the reports in the Contractor's format. Submit the reports using any of the following electronic formats:

(1) Files readable using these Microsoft* 97 Office Products (TACOM can currently read OFFICE 97* and lower): Word, Excel, PowerPoint, or Access. Spreadsheets must be sent in a file format that includes all formulae, macro and format information. Print image is not acceptable. Executable files, other than self-extracting compressed files, are unacceptable.

(2) Files in Adobe PDF (Portable Document Format). Scanners should be set to 200 dots per inch.

(3) Files in HTML (Hypertext Markup Language). HTML documents must not contain active links to live Internet sites or pages. All linked information must be contained within your electronic report, and be accessible offline.

(4) Other electronic formats. Before preparing your report in any other electronic format, please e-mail the COR, with an e-mail copy-furnished to amsta-idq@tacom.army.mil, in order to obtain a decision as to the format's acceptability. This

e-mail must be received by the COR not later than ten calendar days before the draft report's due date.
All alternate methods must be a no cost to the Government.

NOTES: (a) The above formats may be submitted in compressed form using self-extracting files.
(b) Files may be read-only, password protected.

e. Acceptable media: The Contractor shall submit reports via e-mail. If e-mail is not workable, other acceptable media include 100 or 250 Megabyte Zip*-disk, 3 inch disk, or 650 megabyte CD ROM. Identify the software application and version used to create each file submitted.

(1) E-MAIL. Maximum size of each e-mail message shall be three and one-half (3.5) megabytes. Any compressed files must be self-extracting, and you must provide appropriate instructions. You may use multiple e-mail messages if necessary, however, you must annotate the subject lines in this manner: "Message 1 of 3, 2 of 3, 3 of 3."

(2) 100 or 250 MEGABYTE ZIP*-DISK, 3 INCH DISK, OR 650 MEGABYTE CD ROM via U.S. Mail or other carrier. The Contractor shall label and all submitted disks with the Contract number, the Contractor's name, address and a contact's phone number.

NOTE: Please select only one medium by which to transmit each report. For instance, do not submit a report via e-mail and 100 megabyte Zip*-disk.

* Registered Trademark

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE:

1. DATA ITEM NO.: A003
2. TITLE OF DATA ITEM.: Database (DB) for (DB) of mathematical models for
Shape Memory Alloy (SMA) hybrid composites.
3. SUBTITLE :
5. CONTRACT REFERENCE: E.3
6. REQUIRING OFFICE...:AMSRD-TAR-D 9. DIST. STATEMENT REQUIRED.: 12. DATE OF FIRST SUB.: See Block 16
7. DD250 REQ....YES. 10.FREQUENCY..: See Block 16 13. DATE OF SUBS. SUB.: See Block 16
8. APP CODE.....: 11. AS OF DATE.....: See Block 16

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES:	Draft	Final
Dr. Basavaraju B. Raju, Contracting Officer's Rep (COR), E-mail: rajub@tacom.army.mil			1	1
		TOTAL:	1	1

Mailing address:
U..S. Army Tank-automotive and Armaments Command
ATTN: Dr Raju, AMSRD-TAR-D, Mail Stop 255
6501 E. 11 Mile Road
Warren, MI 48397-5000

16. REMARKS:
The contractor shall deliver to the Government a data base (DB) of mathematical models for Shape Memory Alloy (SMA) hybrid composites. The Contractor shall submit final documentation and the data base with the final "Scientific and Technical Report". This CD-ROM will be fully operational with Windows 97 or higher or in a format compatible with TARDEC software.

Media: The contractor shall supply the software on a CDROM and supply the executable and source code of the software.

17. PRICE GROUP: 18. ESTIMATED TOTAL PRICE:

1. DATA ITEM NO.: A004
2. TITLE OF DATA ITEM.: Presentation Material
3. SUBTITLE :

4. AUTHORITY: DI-ADMN-81373
5. CONTRACT REFERENCE: E.4
6. REQUIRING OFFICE...: AMSRD-TAR-D 9. DIST. STATEMENT REQUIRED.: 12. DATE OF FIRST SUB.: See Block 16
7. DD250 REQ.....: 10. FREQUENCY.....: See Block 16 13. DATE OF SUBS. SUB.: See Block 16
8. APP CODE.....: 11. AS OF DATE.....: See Block 16

14. DISTRIBUTION	A. ADDRESSEES	B. COPIES:	DRAFT	FINAL
Dr. Basavaraju B. Raju, Contracting Officer Rep (COR), E-mail: rajub@tacom.army.mil			1	1
		15. TOTAL:	1	1

Mailing address:
U..S. Army Tank-automotive and Armaments Command
ATTN: Dr Raju, AMSRD-TAR-D, Mail Stop 255
6501 E. 11 Mile Road
Warren, MI 48397-5000

16. REMARKS:

a. The Contractor shall deliver one (1) draft 3-panel display board, six-teen (16) months after contract award. The COR shall review the draft 3-panel display board and communicate any comments to the Contractor within thirty (30) days of receipt 3-panel display board and then provide the COR with a final 3-panel display board. The Contractor shall also deliver one (1) draft 3-panel display board 24 months after contract award. The COR shall review the 3-panel display board and communicate any comments to the Contractor within thirty (30) days and then provide the COR with a final 3-panel display board 10 days before the end of the contract.

b. The presentation material may be publicly displayed at government locations, or at professional or industry trade shows or conferences.

c. Complete the presentation material IAW DID DI-ADMN-81373, "Presentation Material" and insert paragraph 10.3 below.

10.3 Requirement: Contractor shall prepare portable 3-panel display board, approximately 72Wx30H in size.

10.3.1 Left panel to include: Purpose, Problem and Procedure.

10.3.2 Center panel to include: Title, Illustrations/Photos and/or Graphics/Charts.

10.3.3 Right panel to include: Results and Conclusions.

d. See the data item description (DI-ADMIN-81373), at the Internet address below, for instructions on completing the required presentation material.

<http://131.82.253.19/docimages/0001/58/88/81373.PD2>

17. PRICE GROUP:

18. ESTIMATED TOTAL PRICE:

INSTRUCTIONS FOR COMPLETING SF 298

1. REPORT DATE. Full publication date, including day, month, if available. Must cite at least the year, e.g. 30-06-1998; xx-06-1998; xx-xx-1998.
2. REPORT TYPE. State the type of report, such as final, technical, interim, memorandum, master's thesis, progress, quarterly, research, special, group study, etc.
3. DATES COVERED. Indicate the time during which the work was performed and the report was written, e.g., Jun 1997 - Jun 1998; 1-10 Jun 1996; May - Nov 1998; Nov 1998.
4. TITLE. Enter title and subtitle with volume number and part number, if applicable. On classified documents, enter the title classification in parentheses.
- 5a. CONTRACT NUMBER. Enter the contract number as it appears in the report, e.g. W56HZV-04-C-0001.
- 5b. GRANT NUMBER. Enter all grant numbers (if applicable) as they appear in the report, e.g. AFOSR-82-1234.
- 5c. PROGRAM ELEMENT NUMBER. Enter all program element numbers (if applicable) as they appear in the report, e.g. 61101A.
- 5d. PROJECT NUMBER. Enter all project numbers (if applicable) as they appear in the report, e.g. 1F665702D1257; ILIR.
- 5e. TASK NUMBER. Enter all task numbers (if applicable) as they appear in the report, e.g. 05; RF0330201; T4112.
- 5f. WORK UNIT NUMBER. Enter all work unit numbers (if applicable) as they appear in the report, e.g. 001; FAPL30480105.
6. AUTHOR(S). Enter name(s) of person(s) responsible for writing the report, performing the research, or credited with the content of the report. The form of entry is the last name, first name, middle initial, and additional qualifiers separated by commas, e.g. Smith, Richard, J, Jr.
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES). Leave Blank
8. PERFORMING ORGANIZATION REPORT NUMBER. Leave Blank
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES). Enter "US Army Tank-automotive & Armaments Command Research Development and Engineering Center, Warren, Michigan 48397-5000".
10. SPONSOR/MONITOR'S ACRONYM(S). Enter "TARDEC".
11. SPONSOR/MONITOR'S REPORT NUMBER(S). Enter report number as assigned by the sponsoring/monitoring agency, if available/known, e.g. BRL-TR-829; -215.
12. DISTRIBUTION/AVAILABILITY STATEMENT. Use agency-mandated availability statements to indicate the public availability or distribution limitations of the report (refer to instructions on the DD Form 1423). If additional limitations/ restrictions or special markings are indicated, follow agency authorization procedures, e.g. RD/FRD, PROPIN, ITAR, etc. Include copyright information.
13. SUPPLEMENTARY NOTES. Enter information not included elsewhere such as: prepared in cooperation with; translation of; report supersedes; old edition number, etc.
14. ABSTRACT. A brief (approximately 200 words) factual summary of the most significant information.
15. SUBJECT TERMS. Key words or phrases identifying major concepts in the report.

16. SECURITY CLASSIFICATION. Enter security classification in accordance with security classification regulations, e.g. U, C, S, etc. If this form contains classified information, stamp classification level on the top and bottom of this page.

17. LIMITATION OF ABSTRACT. This block must be completed to assign a distribution limitation to the abstract. Enter UU (Unclassified Unlimited) or SAR (Same as Report). An entry in this block is necessary if the abstract is to be limited.